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VARIOUS.

A WHITE UN-OXIDIZING ALLOY.

A French patent has been obtained by Marlie for a metallic alloy not liable to oxidize. The ingredients are 10 parts of iron, 35 of nickel, 25 of brass, 20 of tin, and 10 of zinc. The resulting compound is to be plunged white hot into a mixture of 30 parts of sulphuric acid, 10 of nitric acid, 5 of muriatic acid, and 25 of water.

A BLACK MORDANT ON WOOD.

According to Herr Lauber, a black mordant on wood may be thus obtained: — Dissolve a sufficient quantity of logwood in hot water to make the solution reach 10° by Beaumé's aërometer, mix 5 litres (rather more than a gallon) of this solution with $2^{1}/_{2}$ litres (rather more than half-a-gallon) of wood-acetate of iron 11° Beaumé, and half-a-litre (rather more than three-quarters of a pint) of acetic acid 2° Beaumé, and warm the whole for about a quarter of an hour, after which the mordant will be fit for use. It is used cold, and for compact wood must be further diluted with water.

A NEW SUBSTITUTE FOR WOOD-CARVING.

Carved work is one of the most ancient forms of expressing a refined taste, and its examples are to be found in every age and among every people. Even the rudest of communities afford many exquisite illustrations of human skill, and upon its elaborate specimens great sums have been expended. The popularisation of art, which has been the characteristic of society during the last thirty years, has induced many attempts to imitate the sculptured handwork of the artificer, by means of casting and colouring; but public taste and the voice of authority have condemned them on the ground of their unreal nature and their liability to accidents which exposed their inherent worthlessness.

We have had the opportunity of inspecting the examples of a new process for the reproduction of wood-carvings, and believe it will become valuable and popular. The secret must necessarily lie in the preparatory treatment of the wood, and the power of obtaining an enormous pressure. The inventor and patentee, Mr. Ley, requires about 1,500 tons force by means of hydraulic pressure on cut steel dies in order to execute large works of art in relievo to the depth of one inch. The possibility of obtaining this he has demonstrated in the examples on view at 43, Hart Street, Bloomsbury, one of them in particular has actually that depth. Those productions illustrate what can be done, and it will not be long before the invention obtains a prominent position in the decorative arts. Especially is it adapted for panels, pilasters, friezes, centres, medallions, mouldings, borders, or ornamentations proper to every style that can be used in quantities; because, in most cases, the cost of reproduction is about a tithe of the outlay required for hand-work. In truth hand-work, from its costliness, never can obtain a general demand, and from that very circumstance it is evident that this discovery opens a new chapter in the history of taste as applied to the adornment of dwellings without interfering with the venerable art of the artificer in wood. In fact the *bois répoussé* work, as it is termed, must come to be an incentive to the ancient method by diffusing taste and thereby increasing a demand. Then, again, for the business of the cabinet maker it cannot but become a most important auxiliary. Household furniture ornamented by its agency is beautiful and true. It is wood, and not an imitation. We can have it employed on walnut, mahogany, oak, or, indeed, any of the woods commonly in use by the trade; the variety in style, size, and material included within its power involves an assurance of its ultimate and profitable popularity. It is not a sham, and has therefore a claim for durability and solidity which has never been possessed by any previous discovery; and, moreover, the grain of the wood being horizontal, in contradistinction to an American device which could give the pattern only upon the end grain of the wood — an obviously false principle — gives the work exactly the same appearance as if produced by the wood carver.

For the innumerable elegancies of the boudoir and drawing-room essential in modern residences, such as desks, cabinets, frames, carved bellows — so much known in ancient times — platters, and in fact almost every form of artistic taste, whether mediæval or modern, this invention opens up what is practically a new industry.

The grand old bookbinding, in which the carved wood cover was a most distinguished feature, can now be reproduced in all its integrity by an additional new process for producing dies so terribly expensive by hand labour, in absolute facsimile of the most elaborate and, to us, classical models.

The Practical Magazine.

CAST-IRON PAVING.

For some years past certain streets in Warsaw have had cast-iron paving, the use of which is likely to spread, as experience shows it is very economical. The length of the pieces of cast-iron is about $3^{1}/_{2}$ ft., the breadth nearly 2 ft., and the thickness 3 in.; they weigh on the average 220 lbs. each.

The ground is prepared for paving by spreading over it a uniform layer of broken stones, which are then rammed down and covered over with a light layer of sand to make the surface perfectly level. The cast-iron blocks are then laid down as closely together as possible, and the joints are filled up with sand. The edges have ordinary paving stones. For the junctions of roads blocks of special forms are used, varying according to the curvature.

To keep the paving in repair, broken stones are spread over it now and then, especially where hollows appear. Wet weather is most suitable for this, as it saves the expense of watering.

The following are the chief advantages of cast-iron paving: — speedy repair, constant roughness in summer as well as in winter, unchangeableness of outline even with the conveyance of heavy loads, very easy thawing, and cheap maintenance. The net cost is about £ 1. 3s. 6d. per square yard; it varies very slightly according to the price of the pebbles and sand.

Cast-iron paving is particularly good for the entrances of yards because it avoids the production of ruts. *Revue Industrielle.*

ELECTRIC CLOCK-WORK.

M. de Laquerenne has invented an apparatus for producing a perfect agreement between different clocks, and setting up a public clock at little expense. It consists: 1, of an ordinary chronometer; 2, of independent wheelwork mechanism; and 3, of striking mechanism. Each of these three apparatus is moved by a special motor, and may be put in the place most suitable for its operations. They are connected together only by the electricity which conveys to the two latter the order to act in conformity with the indications of the chronometer, which may be put in a special room very far away from the other two mechanisms. These indications, which it sends by electricity, are mere orders, without any moving power to execute them, this power being supplied by the special motors attached to each of the apparatus. Only, as the striking apparatus must always be in accordance with the dial, the electricity conveys the indication of the chronometer to the wheelwork, which transmits it to the striking apparatus. It might carry it directly to the striking apparatus, if it were not desirable to have a visible dial set up.

To ensure the regularity and certainty of every movement, M. de Laquerenne has recourse to very ingenious contrivances. He thinks the high price of the electric clock is the only reason why it is so little used, and, if this obstacle were removed, its use would be widely developed. It is to be hoped his contrivance will be the commencement of such an advance. *Les Mondes.*